PATENT ABSTRACTS OF JAPAN

(11)Publication number :   09-205476

(43)Date of publication of application : 05.08.1997

(51)Int.Cl.	H04M 1/02 H04Q 7/32 H05K 5/02

(21)Application number : 08-012510

(22)Date of filing :   29.01.1996

(71)Applicant : HITACHI LTD
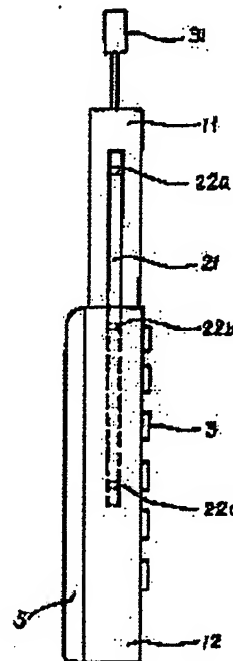
(72)Inventor :   TAKIZAWA KAZUYUKI

　　　　　　　　NISHIMURA TAKASHI

　　　　　　　　TAKAHASHI TOKUKAZU

(54) PORTABLE SLIDE TERMINAL

(57)Abstract:

PROBLEM TO BE SOLVED: To provide a portable terminal miniaturized and made thinner by providing a slidable device in a part of a case body and to provide the portable terminal equipment for protecting a reception part and a liquid crystal display part by a slidable case body.

SOLUTION: In this portable terminal equipment provided with a main body part 11 and the slidable case body 12, plural grooves 21 for sliding the slidable case body 12 and plural holes 22a-22c for fixing the position of the slidable case body 12 to the inner side of the grooves 21 are provided on both side faces of the main body part 11. Then, on the inner side faces of the slidable case body 12, plural projections 23 capable of moving the grooves on the side faces of the main body part 11 are provided.

LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of

rejection]

[Kind of final disposal of application other than
the examiner's decision of rejection or
application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's
decision of rejection]

[Date of requesting appeal against examiner's
decision of rejection]

[Date of extinction of right]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original
precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

CLAIMS

[Claim(s)]
[Claim 1] Two or more slots for making said case which can be slid slide to the both-sides side of said
body section in the personal digital assistant machine which has the body section and the case which can
be slid, The personal digital assistant machine characterized by having the structure of having two or
more holes for fixing the location of said case which can be slid inside said slot, and having two or more
projections which make movable said slot of the side face of said body section in the inside side face of
said case which can be slid.
[Claim 2] The personal digital assistant machine which has the structure where said receiver section and
liquid crystal display section are covered with said case which can be slid, by having the receiver
section, the liquid crystal display section, and the antenna section in said body section, having the
keypad section and the transmission section in claim 1 in said case which can be slid, and moving said
case which can be slid to the location at the time of receipt.
[Claim 3] A personal digital assistant machine with the structure which said antenna section projected
from said body section is interlocked with the opening and closing movement of said case which can be
slid, and expands and contracts in claim 1.

[Translation done.]

* NOTICES *

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the personal digital assistant machine represented by the walkie talkie.
[0002]
[Description of the Prior Art] The hinge equipment which the miniaturization technology of the conventional personal digital assistant machine can fold is the so-called Lord. The personal digital assistant machine which has this hinge equipment consists of the body section and the folding element section fundamentally. In the body section, it mainly has most electro-technical element parts, and becomes the configuration of mainly having a microphone, in it at the folding element section.
[0003] When the folding element section is opened, a personal digital assistant machine can be in the condition of answering a telephone call or generating a telephone call. And at the time of termination of a telephone call, a user turns off the power, and it becomes possible to make a terminal small more by moving to the location which closed the folding element section. Furthermore, it is also possible for moving to the location which closed the folding element section to be interlocked with, and to turn off a terminal.
[0004] These equipments are known as a personal digital assistant machine equipped with the hinge equipment for the telephone which is indicated by JP,5-44218,A and which can be folded.
[0005]
[Problem(s) to be Solved by the Invention] However, in the above-mentioned conventional example, about thin-shape-izing of a realizable thing, since the thickness of the folding section joins the thickness of the body section, the miniaturization of small and the thin-shape-izing which the user is demanding becomes considerable thickness, and implementation of thin-shape-izing will become difficult.
[0006]
[Means for Solving the Problem] The purpose of this invention is to provide some cases with a personal digital assistant machine with a slide function, in order to enable implementation of small and thin-shape-izing of a personal digital assistant machine. This gave two or more projections which become movable along the slot of a body section side face inside the case for making two or more slots trench and slide to a body section both-sides side.
[0007] thereby, the magnitude of a personal digital assistant machine is changed in the condition of each a message and not talking over the telephone, and it becomes possible [offering a thin personal digital assistant machine small at the time of un-talking over the telephone at magnitude equivalent to the existing telephone] at the time of a message. furthermore, the location of the body section and a case is fixed in the state of each a message and un-talking over the telephone, and it becomes realizable by making it not move carelessly.
[0008] The body section which has two or more slots in a both-sides side, and was further equipped with the receiver section and the liquid crystal display section in the personal digital assistant machine, It has two or more projections which become movable. the slot of a body section side face -- a slide -- It

divides into the case which was furthermore equipped with the keypad section and the transmission section and which can be slid, a personal digital assistant machine serves as the existing magnitude by carrying out slide migration of the case which can be slid at the time of a message, and it becomes possible to realize small and thin shape-ization at the time of un-talking over the telephone.
[0009]
[Embodiment of the Invention] Hereafter, this invention is explained to a detail using a drawing.
[0010] Drawing 1 shows the personal digital assistant machine when using this invention as a portable telephone. This terminal consists of the body section 11 and a case 12 which can be slid fundamentally. The condition that the drawing of drawing 1 is in the location which extended the case 12 which can be slid, the user of a personal digital assistant machine can hear voice from the receiver section 1, and it can kick in the talk in the transmission section 4 is shown. In case the liquid crystal display section 2 is used as a portable telephone, it displays required information. For example, the residue display of a cell, a field strength display, the telephone number at the time of dispatch, etc. are displayed. The keypad section 3 is constituted by two or more carbon buttons of 0-9 and # which are looked at by the usual telephone structure, and *. Furthermore, it becomes possible to have additional feature buttons, such as a main power supply carbon button, "transmission", "termination" and "sound volume", and a "redial", and other carbon buttons relevant to a memory re-call.
[0011] Drawing 2 shows the condition of a personal digital assistant machine in case a user closes and contains a message. The case 12 which was extended by drawing 1 and which can be slid is moved to a stowed position. Thereby, the magnitude of a terminal will become compact as compared with the time of a message. Furthermore, in order to move to the location where the case 12 which can be slid covers and hangs on the receiver section 1 and the liquid crystal display section 2 at the time of receipt, it will protect from an impact.
[0012] Drawing 3 shows the side elevation of the personal digital assistant machine in the condition of having extended the case 12 which was shown in drawing 1 and which can be slid. Furthermore, drawing 4 shows the sectional view of the body section 11 and the location fixed part of the case 12 which can be slid. The both-sides side of the body section 11 is equipped with two or more slots 21 for carrying out slide migration of the case 12 which can be slid, and it has further two or more holes 22 (drawing 3 shows 22 a-c) for fixing the location of the case 12 which can be slid inside the slot 21. On the other hand, inside the case 12 which can be slid, it has the projection 23 for carrying out slide migration. It becomes possible to fix the location of the case which can be slid because this projection 23 fits into the hole 22 by the side of a body.
[0013] For example, it cuts one slot at a time to the both-sides side of the body section 11, and suppose that three holes were opened in the slot 21 at equal intervals. At this time, the case 12 which can be slid shall be equipped with two projections at the same spacing as the hole which is inside a slot 21. In this case, by extending the case 12 which can be slid at the time of a message, a projection is fixed to hole 22b and hole 22c, and the condition of drawing 1 can be maintained. Therefore, it becomes possible during a message to maintain magnitude equivalent to the existing telephone. A projection is fixed to hole 22a and hole 22b, and this can maintain the condition of drawing 2 , the time of body section receipt, or while not talking over the telephone. Thereby, it is small and the personal digital assistant machine which can maintain the condition of being a thin shape becomes possible.
[0014]
[Effect of the Invention] In this invention, it becomes possible to offer the personal digital assistant machine which serves as small and a thin shape by having the case which can be slid unlike the approach of the conventional miniaturization. Furthermore, since the receiver section and the liquid crystal display section will be covered with the case which can be slid at the time of receipt, these can be protected.
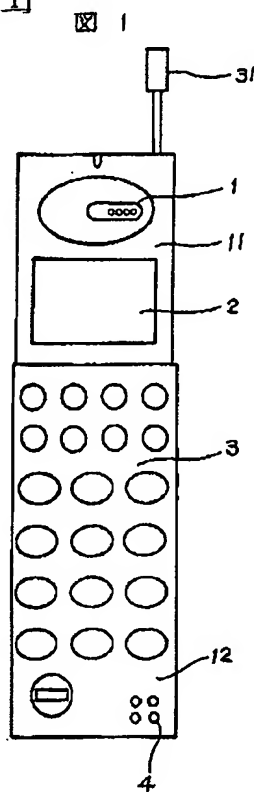

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

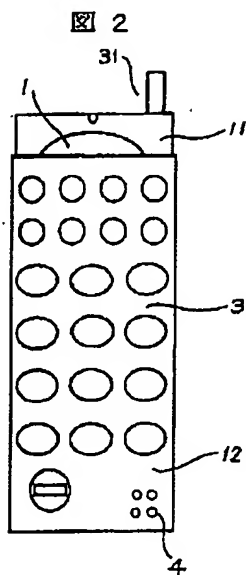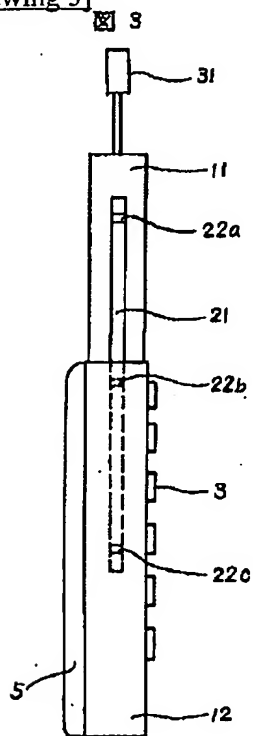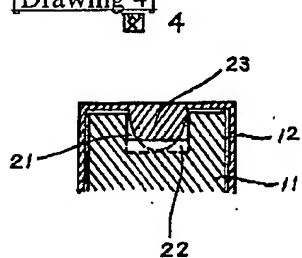DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]
[Drawing 1] A case is made to slide and it is the front view of the personal digital assistant machine in the condition that it can talk over the telephone.
[Drawing 2] The front view of the personal digital assistant machine at the time of body section receipt.
[Drawing 3] A case is made to slide and it is the side elevation of the personal digital assistant machine in the condition that it can talk over the telephone.
[Drawing 4] The sectional view of the location locking-device part of a case.
[Description of Notations]
3 -- Keypad section,
11 -- Body section,
12 -- Case which can be slid,
21 -- Slot,
22 a-c -- Projection fixed hole,
31 -- Antenna section.

[Translation done.]

* NOTICES *

DRAWINGS

[Drawing 1]

[Drawing 2]

図 2

[Drawing 3]

図 3

[Drawing 4]

図 4

[Translation done.]